Influence of solar wind on the climate: a mechanism containing stratospheric ozone

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We recently have shown large correlation between solar parameters and temperature of atmospheric layers although its mechanism is still unknown. Here, we reexamine relevant mechanisms proposed so far, and show that a mechanism containing stratospheric ozone can give a reasonable explanation.

The solar wind particles finally enter the atmosphere, and produce NOx etc., and hence, decompose ozone molecules. The resultant ozone concentration decrease will reflect on the changes in the stratosphere heating due to UV absorption. This can influence the global climate/weather pattern through the changes in the stratosphere temperatures. The solar wind thus can influence the atmospheric circulations and temperatures.

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